

IN THE CLAIMS:

1. (Currently amended) A process method for the preparation of galactose starting from milk or milk serum, the method comprising:

i) providing milk or milk serum, wherein said milk or said milk serum is not subjected to any preliminary removal of the a protein portion of milk and does not containing any bactericides or bacteriostats, comprising the following steps:

ii) inoculating said milk or milk serum suspension is inoculated with wild-type micro-organisms, thereby providing a suspension, wherein said microorganisms are able to hydrolyse lactose into galactose and glucose and able to consume the so obtained said glucose, wherein said microorganisms comprise *Streptococcus thermophilus*;

iii) fermenting the suspension coming from step ii), said is fermenting comprising maintaining said suspension at a constant pH value between 5 ≤ pH ≤ and 7.5 for a period of time ranging between 16 and 24 hours, by adding a base of inorganic origin to said suspension, wherein said base of inorganic origin is selected from the group consisting of sodium hydroxide, potassium hydroxide, calcium hydroxide, magnesium hydroxide, calcium carbonate and ammonia;

iv) acidifying the fermented suspension of step (iii) for a period of time ranging between 5 and 60 hours, said acidifying comprising the pH value is then left to spontaneously decrease stopping the base adding of said base to said fermented suspension, thereby decreasing the pH of the suspension and on for a period of time ranging between 5 and 60 hours thus obtaining a suspension enriched in galactose; and

viii) a solution of the desired galactose is recovered removing the a biomass from the fermentation suspension enriched in galactose coming from of step iv), thereby recovering a solution of galactose, wherein said biomass comprises said microorganisms.

2. (Currently amended) The process method according to of claim 1, in which wherein said milk or milk serum has a concentration in lactose ranging

between 2.5% by weight in respect to the total weight of the milk or milk serum and the saturation concentration.

3. (Currently amended) The ~~process method according to~~ claim 2, in ~~which~~ wherein said milk or milk serum has a concentration in lactose ranging between 3 and 15% by weight in respect to the total weight of the milk or milk serum.

4.-9. (Cancelled)

10. (Currently amended) The ~~process method according to~~ claim 1, in ~~which~~ wherein said fermentation ~~fermenting in step iii)~~ is carried out at a temperature ranging between 25 and 50°C.

11. (Currently amended) The ~~process method according to~~ claim 10, in ~~which~~ wherein said fermentation ~~fermenting in step iii)~~ is carried out at a temperature ranging between 37 and 45°C.

12. (Currently amended) The ~~process method according to~~ claim 1, in ~~which~~ wherein said milk or milk serum, before being subjected to inoculum ~~inoculating in step ii)~~, if necessary, is brought to a pH value ≤ 7.5 .

13. (Currently amended) The ~~process method according to~~ claim 12, in ~~which~~ wherein said milk or milk serum, before being subjected to inoculum ~~inoculating in step ii)~~, is brought to a pH ranging value between 5.0 and 7.5.

14.-15. (Cancelled)

16. (Currently amended) The ~~process method according to~~ claim 1, in ~~which~~ wherein ~~removing a the biomass step (v) the recovery of the galactose solution from the product of fermentation in step ii)~~ is carried out removing the biomass by centrifugation and/or ultrafiltration, thereby recovering a solution of galactose thus obtaining a solution that is possibly optionally nanofiltrated and/or concentrated warming under vacuum, to remove water and obtain a galactose solution of the desired concentration.

17. (Currently amended) The ~~process method according to~~ claim 16, in ~~which~~ wherein after removal of the biomass, the resulting galactose solution is

deionised by ~~electrodialysis~~ electrodialysis and subsequent passage on an ion exchange column, and ~~microfiltrated~~ microfiltered

18. (Currently amended) The ~~process method~~ according to claim 1, ~~in which wherein~~ said milk or milk serum, before being subjected to inoculum ~~inating~~ step i), and/or at the end of fermentation ~~ining~~ step ii), is subjected to pasteurization.

19. (Currently amended) ~~A Method for the of disposal disposing of~~ milk serum derived from dairy industry, ~~the method comprising:~~

i) ~~providing milk serum~~ containing at least 2.5% by weight of lactose in respect to the total weight, ~~wherein said milk serum is not subjected to removal of the a~~ protein portion of milk and ~~does not containing any~~ bactericides or bacteriostats;

ii) ~~comprising inoculating said milk~~ serum with wild-type micro-organisms able to hydrolyse lactose thus obtaining galactose and glucose and to consume the ~~so obtained~~ said glucose, wherein said microorganisms comprise *Streptococcus Thermophilus*; followed by

iii) ~~fermentating~~ fermenting said inoculated serum of step (ii), said fermenting comprising maintaining said inoculated serum at a constant pH value at $\text{pH} \leq 7.5$ for a period of time ranging between 16 and 24 hours, by adding a base of inorganic origin, wherein said base of inorganic origin is selected from the group consisting of sodium hydroxide, potassium hydroxide, calcium hydroxide, magnesium hydroxide, calcium carbonate and ammonia, thereby providing a fermented product; and, finally,

iv) ~~recovering of a~~ galactose solution from the fermented ~~edien~~ product.

20. (Cancelled)

21. (New) The method of claim 1, wherein said microorganisms further comprise *Lactobacillus bulgaricus*.

22. (New) The method of claim 21, wherein said microorganisms further comprise *Lactobacillus casei*.

23. (New) The method of claim 19, wherein said microorganisms further comprise *Lactobacillus bulgaricus*.

24. (New) The method of claim 23, wherein said microorganisms further comprise *Lactobacillus casei*.